

**Amendments to the claims:**

The listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

Claims 1-10 (cancelled).

Claim 11 (new) A dry water resistant coaxial cable comprising:

- a metal core conductor element;
- a dielectric element around the core conductor based on three layers, comprising:
  - a first layer comprising a polymer mixed with an adhesive component and applied onto the conductor as a uniform film;
  - a second layer comprising a cellular high expansion polymer on the first layer; and
  - optionally, a third layer comprising a reinforcement layer on the second layer;
- a second external conductor surrounding the dielectric element;
- a second conductor element on the second external conductor, comprising a water penetration protective element; and
- a protective cover surrounding the second conductor element.

Claim 12 (new). The dry water resistant coaxial cable according to claim 11 wherein the metal core conductor element is selected from a group consisting of copper, aluminum, copper alloy, aluminum alloy, metal plated steel, steel plated, other metals, metal alloys and combinations thereof.

Claim 13 (new). The dry water resistant coaxial cable according to claim 11 wherein the first layer and third layer comprise a material selected from a group consisting of polyethylene and polypropylene;

wherein the film is thin, continuous and homogeneous;  
wherein the material is mixed with an adhesive selected from a group consisting of vinyl adhesive, acrylic adhesive and combinations thereof.

Claim 14 (new). The dry water resistant coaxial cable according to claim 11 wherein the second layer comprises a swelling agent and a high expansion polymer selected from a group consisting of low density polyethylene, medium density polyethylene, high density polyethylene, polypropylene, polyester and combinations thereof.

Claim 15 (new). The dry water resistant coaxial cable according to claim 14 wherein the swelling agent is selected from a group consisting of azodicarbonamide, p-toluene, sulphonyl hydrazide, 5-phenyl tetrazol and combinations thereof.

Claim 16 (new). The dry water resistant coaxial cable according to claim 11 wherein the second external conductor element comprises a material selected from a group consisting of aluminum, copper, aluminum alloy, copper alloy, other metals and metal alloy and combinations thereof.

Claim 17 (new). The dry water resistant coaxial cable according to claim 11 wherein the water penetration protective element comprises one or several swellable fibers or tapes selected from a group consisting of polyester threads, polyacrylamide, polyacrylic acid, polyacrylate fibers, other swellable fibers and combinations thereof.

Claim 18 (new). The dry water resistant coaxial cable according to claim 11 wherein the protective cover comprises a polymer selected from a group consisting of low density polyethylene, medium density polyethylene, high

density polyethylene and combinations thereof.

Claim 19 (new). The dry water resistant coaxial cable according to claim 11, wherein the core conductor comprises a copper plated aluminum wire, having a uniform circular cross section of at least  $3.15 \pm 0.3$  mm diameter.

Claim 20 (new). The dry water resistant coaxial cable according to claim 11, wherein the adhesive component is selected from a group consisting of ethylene acrylate acid, ethylene vinyl acid and combinations thereof.

Claim 21 (new). The dry water resistant coaxial cable according to claim 11, wherein the second reinforcement layer is applied onto the core conductor, shows a better watertightness to the swellable dielectric element, and improves its superficial appearance; wherein it comprises at least  $13.0 \pm 0.10$  mm diameter.

Claim 22 (new). The dry water resistant coaxial cable according to claim 11, wherein the second external conductor comprises a material selected from a group consisting of aluminum, copper, braided mesh of metal, alloy metal, other metals and combinations thereof;  
wherein the material is formed in a cylindrical pipe and can be longitudinally welded, extruded or the edges can be overlapped; and  
wherein the external conductor has a thickness of at least 0.34 mm and the diameter on the pipe is at least  $13.70 \text{ mm} \pm 0.10 \text{ mm}$ .

Claim 23 (new). The dry water resistant coaxial cable according to claim 11, wherein the water penetration protective element comprises swellable tapes which can be placed helically, annularly or longitudinally on said conductor.

Claim 24 (new). The dry water resistant coaxial cable according to claim 11, wherein the water penetration protective element has an absorption speed of about 15 ml/g per minute and an absorption capacity of more than 30 ml/g.

Claim 25 (new). The dry water resistant coaxial cable according to claim 18 wherein the protective cover is medium density black polyethylene.

Claim 26 (new). The dry water resistant coaxial cable according to claim 18 wherein the diameter of the protective cover is about  $15.5 \text{ mm} \pm 0.10 \text{ mm}$  with about  $0.67 \text{ mm} \pm 0.02 \text{ mm}$  thickness.

Claim 27 (new). The dry water resistant coaxial cable according to claim 25, further comprising antioxidants.

Claim 28 (new). A method of preparing a dry water resistant coaxial cable according to claim 1, comprising the steps of:

- a) preparing a core conductor feeding reel welding its end onto another reel so that the manufacturing is continuous;
- b) passing the core conductor onto a first polymer film application through extrusion;
- c) extruding, based on a second polymer layer mix with a swellable agent at a high pressure inert gas injection to improve cellular expansion;
- d) optionally, coextruding a third polymer film having the same characteristics as the first polymer film;
- e) cooling the obtained core at room temperature to prevent deformation during winding;
- f) winding the cooled core and applying a pipe shaped external conductor element; wherein said pipe can be formed selected from a process consisting of welding, overlapping of the edges and extruding;

- g) applying the water penetration protection element by a process selected from a group consisting of helically, annularly and longitudinally; and
- g) applying the protective cover through extrusion.

Claim 29 (new). The method according to claim 28, wherein the core can be manufactured through triple co-extrusion in three extruders; wherein one extrusion is for the first layer, another extrusion is for the second layer and the other extrusion is for the third layer film, which are connected to an extrusion head.

Claim 30 (new). The method according to claim 28 wherein the second layer polymer is selected from a group consisting of low density polyethylene, medium density polyethylene, high density polyethylene, polypropylene, polyester and combinations thereof.

Claim 31 (new). The method according to claim 28 wherein the first and third layer polymer is mixed with an adhesive selected from a group consisting of vinyl adhesive, acrylic adhesive and combinations thereof.

Claim 32 (new). The method according to claim 28 wherein the adhesive is selected from a group consisting of ethylene acrylate acid, ethylene vinyl acid and combinations thereof.

Claim 33 (new). The method according to claim 28 wherein the swelling agent is selected from the group consisting of azodicarbonamide, p-toluene sulphonyl hydrazide and 5- phenyl tetrazol.

Claim 34 (new). The method according to claim 28 wherein step (b) is conducted comprising the steps of: a) extruding; b) flooding the conductor in the insulating

material; and c) removing the excess material or through sprinkling.

Claim 35 (new). The method according to claim 28 wherein step (c) is conducted using a single or double extruder (cascade) to obtain high cellular expansion polymer.

Claim 36 (new). The method according to claim 28 wherein the inert gas employed is selected from a group consisting of argon, nitrogen, carbon dioxide, and combinations thereof.

Claim 37 (new). The method according to claim 28 wherein in step (f), if welding process was employed, it is conducted at high frequency; wherein after welding, the pipe is submitted to a trimming step; wherein a core external conductor complex passes through a diameter adjustment box; said box comprising a plurality of dices; and then lubricating the pipe and the dice.

Claim 38 (new). The method according to claim 28 wherein in step (f), if overlapping of edges was applied, the conductor goes to directly to the diameter adjustment box without lubrication process.

Claim 39 (new). The method according to claim 28 wherein in step (f), if applied through extrusion, the conductor element is selected from a group consisting of aluminum, copper, aluminum alloy, copper alloy, other metals, metal alloys and combinations thereof, comprising the steps of: a) unwinding a wire rod; b) penetrating the wire and core into an appropriate extrusion device to form a pipe; c) passing the core external conductor complex through a diameter adjustment box; said box comprising a plurality of dices; and d) lubricating the pipe and dice.

Claim 40 (new) The dry water resistant coaxial cable according to claim 1 prepared by a process comprising the steps of:

- a) preparing a core conductor feeding reel welding its end onto another reel so that the manufacturing is continuous;
- b) passing the core conductor onto a first polymer film application through extrusion;
- c) extruding, based on a second polymer layer mix with a swellable agent at a high pressure inert gas injection to improve cellular expansion;
- d) optionally, coextruding a third polymer film having the same characteristics as the first polymer film;
- e) cooling the obtained core at room temperature to prevent deformation during winding;
- f) winding the cooled core and applying a pipe shaped external conductor element; wherein said pipe can be formed selected from a process consisting of welding, overlapping of the edges and extruding;
- g) applying the water penetration protection element by a process selected from a group consisting of helically, annularly and longitudinally; and
- g) applying the protective cover through extrusion.